

patella and tibia i. much longer than iv. ; femur iv. shorter than i. Protarsal scopula of i. covering a little less than a half the segment, with two long spines at its base ; of ii. as on i. ; of iii. covering the distal third, with many basal spines ; of iv. covering about  $\frac{1}{5}$ , which is elsewhere strongly spined ; tibiæ of all the legs and of the pedipalpus spined.

*Hab.* Herval (Paraná).

Type in my own collection.

Rio, May 1920.

XXXVI.—*New or little-known Tipulidæ (Diptera).—IV.*  
*Ethiopian Species.* By CHARLES P. ALEXANDER, Ph.D.,  
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THIS paper is a continuation of the preceding parts under this title. The material included is almost all from Cameroun, collected by the Rev. J. A. Reis at Efulan, Batanga, and at Lonji near the Nlong River (erroneously written Ulou in Part II. of this series). The types are preserved in the collection of the writer, except where stated to the contrary.

*Dicranomyia terebrina*, sp. n.

General coloration brown, the mesonotum brownish-yellow pollinose, but without distinct markings ; antennæ brownish black ; head light grey ; femora light yellowish brown ; wings pale brown, stigma indistinct ;  $Sc_1$  ends just before the origin of  $R_s$ ,  $Sc_2$  not far from its tip ; cell 1st  $M_2$  closed ; ovipositor with the sternal valves bifid at their tips.

*Female.*—Length 6.4 mm. ; wing 7 mm.

Rostrum and palpi dark brown. Antennæ brownish black, the flagellar segments oval. Head light grey.

Mesonotum brown, heavily brownish-yellow pollinose, without distinct stripes. Pleura dark brown, sparsely pruinose. Halteres rather long, light yellow, the knobs brown. Legs with the coxæ concolorous with the pleura ; trochanters dull yellow ; femora light yellowish brown ; tibiæ and tarsi dark brown. Wings very pale brown ; stigma very indistinct ; indistinct brown seams along the cord and outer end of 1st  $M_2$  ; veins pale brown,  $C$  and  $Sc$  light yellow, the former more orange distally and ending at  $R_{4+5}$ . Venation :  $Sc$  of moderate length,  $Sc_1$  ending a

short distance beyond the origin of  $R_s$ ,  $Sc_2$  located a short distance beyond the origin of  $R_s$ , removed from the tip of  $Sc_1$  to a distance about equal to  $r-m$ ;  $R_s$  long, gently arcuated, a little more than twice as long as the deflection of  $R_{4+5}$ ;  $r$  close to the tip of  $R_1$ ; cell 1st  $M_2$  closed, longer than vein  $M_3$  beyond it;  $m$  gently arcuated, a little longer than  $r-m$ ; basal deflection of  $Cu_1$  a short distance before the fork of  $M$ ;  $Cu_2$  much longer than the basal deflection of  $Cu_1$ .

Abdomen with the basal tergites brown; remainder of the abdomen largely light fulvous brown. Ovipositor with the tergal valves very small, slender, upcurved; sternal valves broad, slightly expanded distally, the tips bifid.

*Hab.* West Africa.

*Holotype*, ♀, Batanga, Cameroun, October 13, 1919 (*J. A. Reis*).

"Caught flying about lamp at night."

*Dicranomyia shawi*, sp. n.

General coloration obscure yellow, the mesonotal præscutum with a broad median stripe and inconspicuous lateral stripes of brown; pleura with an indistinct brown longitudinal stripe; halteres yellow, the knobs dark brown; legs with the femora brown, tipped with yellow; wings brownish subhyaline; stigma dark brown;  $Sc$  long, cell 1st  $M_2$  closed;  $Cu_2$  longer than the deflection of  $Cu_1$ ; abdomen dark brown, the segments conspicuously ringed caudally with yellow.

*Female*.—Length about 7 mm.; wing 8.5 mm.

Rostrum and palpi brown, the latter rather conspicuous, slightly paler than the rostrum. Antennæ with the scapal segments dark brown; flagellum broken. Head yellowish grey.

Pronotum conspicuous, obscure yellow, dark brown above. Mesonotal præscutum obscure yellow with a broad, conspicuous, dark brown median stripe that ends before the suture; lateral præscutal stripes very narrow anteriorly, rather indistinct, crossing the suture and covering most of the scutal lobes; scutellum testaceous, darker caudally; postnotum testaceous. Pleura yellow, with a broad but ill-defined longitudinal stripe that extends from the cervical sclerites to the base of the abdomen, passing beneath the base of the halteres. Mesosternum shiny brown. Halteres light yellow,\*the apices of the knobs dark brown. Legs with the fore coxæ shiny brown; middle and hind coxæ light yellow; trochanters yellow; femora brown, the bases

indistinctly paler, the tips narrowly but abruptly pale yellow; remainder of the legs brown; claws small, simple or nearly so. Wings brownish subhyaline, cell *Sc* more yellowish; stigma oval, dark brown; cord, outer end of cell 1st  $M_2$ , and wing-apex indistinctly seamed with darker; veins dark brown. Venation;  $Sc_1$  long, ending before mid-length of *Rs*,  $Sc_2$  at the tip of  $Sc_1$ ; *Rs* moderately elongated; gently arcuated, about twice the length of the deflection of  $R_{4+5}$ ; *r* at the tip of  $R_1$ ; cell 1st  $M_2$  pentagonally rectangular, shorter than vein  $M_3$  beyond it; *m* about twice as long as  $r-m$ ; basal deflection of  $Cu_1$  just beyond the fork of *M*;  $Cu_2$  longer than the basal deflection of  $Cu_1$ .

Abdominal segments dark brown, the segments conspicuously ringed caudally with yellowish; eighth tergite entirely yellow. Ovipositor with the tergal valves very short, slender, strongly upcurved to the acute tips; sternal valves long, straight, compressed, the tips subacute.

*Hab.* South Africa.

*Holotype*, ♀, Shafton Grange, Natal, April 28, 1919 (A. G. Shaw).

Type in the collection of the Natal Museum.

This interesting *Dicranomyia* is respectfully dedicated to its collector, Mr. Alfred G. Shaw.

*Dicranomyia flavopyga*, sp. n.

General coloration obscure yellow; antennæ black; mesonotal præscutum with three brown stripes; pleura with a broad longitudinal stripe; wings with a strong grey suffusion; stigma brown; indistinct brown seams along the cord and outer end of cell 1st  $M_2$ ; *Sc* long, cell 1st  $M_2$  closed;  $Cu_2$  and the basal deflection of  $Cu_1$  subequal; abdomen dark brown, the pleurites of the male hypopygium yellow; some of the pleural appendages digitiform and highly complicated.

*Male*.—Length about 5.2 mm.; wing 6.8 mm.

Rostrum brownish yellow, about one-half as long as the head; palpi black. Antennæ black, the flagellar segments oval. Head dull grey.

Pronotum dark brown, the scutellum light yellow. Mesonotal præscutum dull yellow, with three conspicuous brown stripes; scutum pale, more testaceous behind. Pleura brownish yellow with a broad, conspicuous, longitudinal stripe. Mesosternum brownish. Halteres pale brown, the knobs dark brown. Legs with the coxæ and trochanters pale yellowish testaceous; remainder of the legs broken.

Wings with a strong grey suffusion; stigma oval, brown; narrow and indistinct pale brown seams along the cord and outer end of cell 1st  $M_2$ ; veins brown. Venation:  $Sc$  long,  $Sc_1$  ending opposite from three-fourths to four-fifths the length of the long arcuated  $Rs$ ,  $Sc_2$  about its own length from the tip of  $Sc_1$ ;  $r$  at the tip of  $R_1$ ; basal deflection of  $R_{4+5}$  about twice the length of  $r-m$ ; cell 1st  $M_2$  rectangularly pentagonal, about as long as  $M_3$  beyond it, the outer end broader than the inner end;  $m$  about equal to  $r-m$ ; basal deflection of  $Cu_1$  just beyond the fork of  $M$ ;  $Cu_2$  and the deflection of  $Cu_1$  subequal or the latter a little longer.

Abdomen dark brown, the pleurites of the hypopygium conspicuously light yellow; appendages of hypopygium dark brown. Hypopygium unusually complicated for a member of this genus; the longest pleural appendage is slender, straight, on the outer face with a row of about thirteen cylindrical, chitinized pegs that produce a serrate appearance; these pegs are interspersed with long setæ and slender setigerous tubercles; a second appendage is long, clavate, with a few long bristles, and with a conspicuous flattened lobe near its base; a third appendage is densely covered with long bristles that curve at the tips; besides these appendages there are other smaller cushions and blades, producing a structure that is very hard to describe.

*Hab.* South Africa.

*Holotype*, ♂, Shafton Grange, Natal, April 28, 1919 (A. G. Shaw).

Type in the collection of the Natal Museum.

*Dicranomyia cinnamomota*, sp. n.

Antennæ brownish black, the flagellar segments with conspicuous pedicels to produce a moniliform appearance; head dark blue-grey; mesonotal præscutum yellowish cinnamon-coloured, the thoracic pleura light blue-grey pruinose; legs with the tibiæ and tarsi whitish; wings brownish grey, the stigma pale brown;  $Sc$  long, cell 1st  $M_2$  open by the atrophy of  $m$ ; abdomen dark brown.

*Female*.—Length about 3 mm.; wing 4.2 mm.

Rostrum and basal segment of palpi dull yellow, remainder of the palpi dark brown. Antennæ brownish black, the pedicel of each segment pale to produce an indistinctly bicolorous effect; flagellar segments strongly pedicelled to give a moniliform appearance to the organ. Head dark, covered with a blue-grey bloom.

Mesonotal 'præscutum bright yellowish cinnamon-coloured, darker laterally; remainder of the mesonotum dark brown. Pleura dark, with a broad longitudinal stripe of blue-grey, produced by a heavy bloom that covers most of the pleura. Halteres short, pale brown, the knobs darker brown. Legs with the coxæ obscure brownish yellow, the bases darker; trochanters whitish; femora testaceous, the tibiæ and tarsi whitish; only the terminal tarsal segment is darkened; claws small and apparently simple. Wings with a brownish-grey suffusion, in the anal cells nearly hyaline; a large hyaline area in cells  $R_5$ ,  $M_2$ , and the base of  $M_3$ ; stigma small, short-oval, pale brown; veins brown. Venation:  $Sc$  long,  $Sc_1$  ending at about two-thirds the length of the sector,  $Sc_2$  at the tip of  $Sc_1$ ;  $Rs$  long, slightly angulated at origin;  $r$  at tip of  $R_1$ , bisecting the stigma, the tip of  $R_1$  and  $r$  pale; deflection of  $R_{4+5}$  arcuated, about equal to the basal deflection of  $Cu_1$ ; cell 1st  $M_2$  open by the atrophy of  $m$ ;  $Cu_1$  plus  $M_3$  about equal to the free tip of  $Cu_1$  alone;  $Cu_2$  shorter than the deflection of  $Cu_1$ .

Abdomen dark brown, the sternites a very little paler. Ovipositor with the valves yellowish horn-colour, very short and straight.

*Hab.* West Africa.

*Holotype*, ♀, Efulan, Cameroun, May 6, 1920 (*J. A. Reis*).

"Resting on a tree-trunk, near a stream."

*Dicranomyia venustipennis*, sp. n.

Antennæ black, the flagellar segments with long, unilaterally arranged, verticils; general coloration of mesonotum dark brown; pleura obscure yellow, the mesepisternum dark brown; halteres black; wings hyaline, greyish in the posterior and anal cells, beautifully variegated with yellow and brown; radial and medial veins near the wing-tip conspicuously seamed with dark brown; a conspicuous yellowish longitudinal stripe in cells  $R$  and 1st  $R_1$ ;  $Rs$  very long, angulated and spurred at origin; abdomen brown, the intermediate segments banded posteriorly with yellowish.

*Male*.—Length 6.8 mm.; wing 6.5–6.6 mm.

Rostrum and palpi dark brown. Antennæ with 14 segments, black; second scapal segment nearly globular; basal flagellar segments subglobular, thence gradually passing from short-cylindrical to elongate-oval, the terminal segment very elongate-fusiform, about as long as the penultimate and antepenultimate taken together; each flagellar segment is provided with several short bristles and one very long

verticil, these latter arranged unilaterally. Head dark brown, the front and anterior part of the vertex silvery white.

Mesonotal præscutum dark brown with a reddish cast, without markings; remainder of the mesonotum more brownish testaceous; postnotum brown, passing into dull yellow behind. Pleura obscure yellow, the mesosternum and mesepisternum with a narrow, transverse, shiny, dark brown band extending from the wing-root to above the middle coxæ; lateral sclerites of the postnotum brown. Halteres dark brown. Legs with the coxæ and trochanters obscure yellow; femora pale brownish testaceous, soon passing into darker brown; tips of the femora more or less distinctly pale; tibiæ dark brown, at about the apical third fading into yellowish brown; tarsi yellowish brown, the distal segments dark brown; claws long and slender, each with a single, long, erect, basal spine. Wings with the anterior half nearly hyaline, the posterior half distinctly suffused with grey; a conspicuous yellowish longitudinal stripe in cells  $R$  and 1st  $R_1$ , sometimes interrupted by a quadrate pale brown blotch at the origin of  $R_s$ ; this yellow stripe extends to just beyond the fork of  $R_s$ ; medium brown markings arranged as follows: at the wing-base; at the origin of  $R_s$ , extending from costa to media but paler in  $Sc$ ; a spot in cells  $C$  and  $Sc$  shortly before their outer ends; a broad brown seam along the cord, extending from costa to the posterior margin, in cell  $R$  continued basad along  $R_s$  to proximad of the middle of its length; small brown clouds at the ends of the anal veins and in the anal angle. The following veins are broadly and conspicuously seamed with dark brown, the hyaline ground-colour being restricted to the centres of the cells: tip of  $R_1$  beyond  $r$ ;  $r$  itself;  $R_{2+3}$  from slightly before  $r$  to the margin; the distal two-thirds to three-fourths of  $R_{4+5}$ ;  $M_{1+2}$ ,  $M_3$ , and  $m$ , this colour on  $M_{1+2}$  ending on a level with the proximal ends of the seams on the radial veins. Venation:  $Sc$  long,  $Sc_1$  ending just before the fork of  $R_s$ ,  $Sc_2$  at the extreme tip of  $Sc_1$ ;  $R_s$  unusually long, strongly angulated and spurred at origin;  $r$  more than its own length from the tip of  $R_1$ ; deflection of  $R_{4+5}$  short, about one-half longer than  $r$ ;  $r-m$  short, about one-half to one-third  $m$ ; cell 1st  $M_2$  rectangular, longer than the veins issuing from it; basal deflection of  $Cu_1$  angularly bent at mid-length,  $Cu_2$  very short, not more than one-half the basal deflection of  $Cu_1$ . Costa thickened and conspicuously fringed with long, black, erect hairs.

Abdomen with segment one pale yellowish; segments two

to six dark brown, with about the caudal two-fifths conspicuously yellowish; remainder of the abdomen mostly dark brown. Male hypopygium of the *Dicranomyia* type; ventral pleural appendage moderately fleshy; dorsal appendage appearing as a chitinized curved hook that is rather flattened and with the margins indistinctly serrulate. Penis-guard compressed, the head enlarged, with a conspicuous blackened point that is directed ventrad.

*Hab.* West Africa.

*Holotype*, ♂, Efulau, Cameroun, May 7, 1920 (*J. A. Reis*).

*Paratopotype*, 1 ♂.

*Dicranomyia venustipennis* is a strikingly beautiful fly that may well be considered as representing a distinct group of species or even a subgenus. The structure of the antennæ, especially the arrangement of the verticils and the shape of the ultimate segment, and the venation, especially the exceedingly elongate sector and the very short *Cu*<sub>2</sub>, all indicate an isolated fly, whose nearest relatives as known are presumably species such as *D. recurvans*, Alex., *D. recedens*, Alex., and other members of this group.

#### *Rhipidia pallidipes*, sp. n.

Generally similar to *R. miosema* (Speiser); general coloration brownish yellow, the mesonotal præscutum with three darker stripes that are confluent on the anterior half of the sclerite; pleura light brown with two narrow, dark brown, longitudinal stripes that are of about equal width; legs with the femora and tibiæ usually light yellow; wings yellowish subhyaline, with small brown spots along the costa and conspicuous, small, grey clouds in all the cells; *Sc*<sub>1</sub> ending near mid-length of *Rs*.

*Male*.—Length about 5 mm.; wing 6 mm.

*Female*.—Length 6.2 mm.; wing 6.5–6.6 mm.

Rostrum and palpi black. Antennæ black, at about the seventh flagellar segment passing into brownish yellow, the three or four segments before the very long apical segment pale cream-colour; first flagellar segment reddish yellow; flagellar segments slightly produced on the inner face, each with a short, but conspicuous, basal pedicel. Head dark grey.

Pronotum dark brown. Mesonotal præscutum brownish yellow, with three irregular darker stripes; the median stripe is broad posteriorly, constricted into a narrow line at about mid-length, the anterior half sub-confluent with the strongly inflected lateral stripes; scutum similar, the centres

of the lobes dark; scutellum and postnotum reddish brown, sparsely pruinose. Pleura light brown, sparsely pruinose, with two very narrow, brown, longitudinal stripes, the more ventral extending across the bases of the coxæ. Halteres yellow, the knobs a little darker. Legs with the coxæ yellow, the bases darkened by the ventral pleural stripe; trochanters dull yellow; remainder of the legs yellow, only the distal tarsal segments darker; tarsal claws rather long and slender with one small acute tooth near mid-length. Wings pale yellowish subhyaline, with a heavy brown and grey clouding; five small dark brown spots along the anterior margin, the first at the base of cell  $R$ , the third at the origin of  $R_s$ , the fourth at the tip of  $Sc_1$ , the last (stigmal) at  $r$ , these spots smaller than the interspaces; cord and outer end of cell 1st  $M_2$  seamed with brownish grey; pale grey spots and clouds in all the cells, the areas being about as extensive as the pale spaces between; veins yellowish brown,  $C$  and  $Sc$  more yellowish. Venation:  $Sc_1$  ending just before mid-length of  $R_s$ ,  $Sc_2$  not far from its tip;  $R_s$  gently arcuated, a little more than twice the deflection of  $R_{4+5}$ ;  $r$  at the tip of  $R_1$ ; cell 1st  $M_2$  longer than  $M_3$  beyond it;  $m$  a little more than one-half the outer deflection of  $M_3$ ; basal deflection of  $Cu_1$  before the fork of  $M$ , the distance about equal to  $r-m$ .

Abdomen dark brown, the hypopygium obscure yellow; sternites brownish yellow.

*Hab.* Tropical Africa.

*Holotype*, ♂, Obuasi, Ashanti, April 17, 1906, in house (*W. M. Graham*). B.M. no. 1907. 74.

*Allotopotype*, ♀, Oshogbo, Southern Nigeria (*Dr. T. F. G. Mayer*). Presented by the Ent. Research Comm. 1911. 422.

*Paratypes*, ♂, Aburi, Gold Coast, January 10, 1911 (*L. Armstrong*); ♂, Accra, Gold Coast, April 23, 1911, in latrine (*Dr. A. Connal*): presented by the Ent. Research Comm. 1911. 422. ♂, Bibiani, Gold Coast, October 1910 (*Dr. H. F. G. Spurrell*); ♂, San Salvador, Portuguese Congo, August–October 1908 (*Dr. M. Gamble*): B.M. no. 1908. 266. ♂, Scottburgh, Natal, January.

Type in the collection of the British Museum (Natural History).

*R. pallidipes* is obviously related to *R. afra*, Bergroth, *R. miosema* (Speiser), *R. spadicithorax* (Edwards), and other species of this group of *Dicranomyia*-like species of *Rhipidia*. Some of the specimens of the series have the legs considerably darker than the type.



*Rhamphidia subobsoleta*, sp. n.

Rostrum long and slender, about as long as the thorax alone; general coloration dark brown; wings with a brownish-grey tinge, the stigma elongate, narrow, brown; wing-tip narrowly darkened; vein  $R_{2+3}$  almost straight.

*Male*.—Length (excluding rostrum) about 6 mm.; wing 4.7 mm.; rostrum alone 1.25 mm.

*Female*.—Length (excluding rostrum) about 6 mm.; wing 4.9 mm.; rostrum alone 1.3 mm.

Rostrum long and slender, nearly as long as the thorax alone or more than three times the length of the head, black, the palpi brownish black. Antennæ dark brown, verticils rather short. Head dark brownish black.

Mesonotum brown, the pleura obscure brownish yellow. Halteres pale brown, the knobs darker. Legs with the coxæ and trochanters brownish testaceous; remainder of the legs brown, the tarsi gradually fading into pale brownish yellow. Wings with a distinct brownish-grey tinge, cells *C* and *Sc* more saturated; wing-margin in cells  $R_1$  and  $R_3$  narrowly but distinctly darkened; stigma elongate, narrow, brown, not approaching vein  $R_{2+3}$ ; veins dark brown. *Rs* with macrotrichia for its entire length; *M* and *Cu* with only one or two macrotrichia before their forks. Venation: *Sc* long, ending some distance beyond the fork of *Rs*,  $Sc_2$  at the extreme tip of  $Sc_1$ ; *Rs* relatively short, gently arcuated;  $R_{2+3}$  but slightly sinuous, with macrotrichia for its entire length, with the exception of a short space at the apex and origin; basal deflection of  $R_{4+5}$  but little longer than *r-m*; cell 1st  $M_2$  very small, the basal deflection of  $Cu_1$  at about the middle of its length, the veins issuing from it long and slender.

Abdomen dark brown, including the hypopygium. Ovipositor with the valves long and slender, dark brownish black, the tips narrowly horn-colour.

*Hab.* West Africa.

*Holotype*, ♂, Batanga, Kribi, Cameroun, April 26, 1920 (J. A. Reiss).

*Allotopotype*, ♀.

*Paratypes*, 3 ♂, Akok, Cameroun, August 14, 1920 (J. A. Reiss).

*Rhamphidia subobsoleta* is closely allied to *R. obsoleta*, Alex. (Siera Leone), from which it differs in the smaller size, the proportionately shorter rostrum, the darker wings with the stigma smaller and better defined, the darkened wing-tip, the smaller cell 1st  $M_2$ , and other details of coloration and venation.

*Rhamphidia submorosa*, sp. n.

Rostrum a little longer than the head; antennæ dark brown; general coloration dark brown; legs dark brown, the terminal tarsal segments but little paler; wings greyish subhyaline, stigma oval, clear-cut, dark brown; wing-tip narrowly darkened;  $Sc_1$  atrophied;  $R_{2+3}$  rather short, gently sigmoid in its course; cell 1st  $M_2$  long and narrow.

*Female*.—Length (excluding rostrum) about 8.5 mm.; wing 7.6 mm.; rostrum alone, about 0.9–1 mm.

Rostrum relatively short, only a little longer than the head, dark brown, the base and ventral surface paler; palpi dark brown. Antennæ dark brown. Head brownish grey; vertex between the eyes considerably narrowed.

Mesonotal præscutum brown, darker medially; remainder of the mesonotum dark brown. Pleura brownish testaceous. Halteres brown, the base of the stem obscure yellow. Legs with the coxæ, trochanters, and bases of the femora brownish testaceous; remainder of the legs dark brown, the terminal tarsal segments and the claws very slightly paler. Wings greyish subhyaline; cells  $C$  and  $Sc$  a little more saturated; stigma conspicuous, oval, clear-cut, dark brown; wing-tip in cell  $R_3$  narrowly but conspicuously darkened; veins dark brown. Venation:  $Sc_1$  atrophied or barely indicated near the tip of  $Sc_2$ , the latter ending nearly opposite the fork of  $Rs$ ;  $R_{2+3}$  shorter than in *R. flavitarsis*, gently sigmoid in its course; cell 1st  $M_2$  long and narrow, the second section being much longer than the basal section; basal deflection of  $Cu_1$  just beyond the fork of  $M$ .

Abdominal tergites dark brown; basal sternites obscure yellow, the distal segments passing into brown. Ovipositor with the valves horn-coloured, very long and slender, especially the tergal valves.

*Hab.* West Africa.

*Holotype*, ♀, Efulan, Cameroun, May 6, 1920 (*J. A. Reis*).

“At table, flying around lamp.”

*Rhamphidia submorosa* is allied to *R. flavitarsis*, Alex. (Cameroun), from which it differs in its smaller size, the different wing-pattern and venation, and the darkened tarsal segments.

*Rhamphidia paupercula*, sp. n.

General coloration pale brownish yellow; rostrum a little longer than the head; wings subhyaline, the costal region

slightly more yellowish; abdominal tergites with the caudal margins infuscated.

*Male*.—Length 5.5 mm.; wing 5 mm.

*Female*.—Length 7–7.1 mm.; wing about 6.4 mm.

Rostrum comparatively long and slender, a little longer than the head alone, pale testaceous; palpi dark brown. Antennæ dark brown. Head brown.

Mesonotum brownish yellow, without distinct markings. Pleura yellow. Halteres brown, the base of the stem yellowish. Legs with the coxæ and trochanters yellowish testaceous; remainder of the legs pale brownish testaceous. Wings subhyaline, cells *C* and *Sc* slightly more yellowish; stigma small, very pale brown; veins pale brown. Venation: *Sc* long, *Sc*<sub>1</sub> ending a short distance before the fork of *Rs*, *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub> and about twice its length; *Rs* rather long, evenly arcuated; *R*<sub>2+3</sub> gently sinuous; cell *R*<sub>3</sub> at the margin very wide, cell *R*<sub>1</sub> a little wider than cell 2nd *M*<sub>2</sub> but narrower than *M*<sub>3</sub>; deflection of *R*<sub>4+5</sub> a little more than one-half *r-m*; cell 1st *M*<sub>2</sub> pentagonal; deflection (first section) of *M*<sub>1+2</sub> long, about equal to or slightly shorter than the second section of *M*<sub>1+2</sub>; veins beyond cell 1st *M*<sub>2</sub> long and slender; *m* and outer deflection of *M*<sub>3</sub> subequal; basal deflection of *Cu*<sub>1</sub> a little before the fork of *M*.

Abdomen obscure yellow, the caudal margins of the tergites infuscated medially.

*Hab.* West Africa.

*Holotype*, ♂, Batanga, Cameroun, March 23, 1920 (*J. A. Reis*).

*Allotype*, ♀, Efulan, Cameroun, May 7, 1920 (*J. A. Reis*).

The female is entirely similar to the male, but is slightly larger, even lighter-coloured, and with the basal deflection of *Cu*<sub>1</sub> closer to the fork of *M*.

*Orimargula longicornis*, sp. n.

Antennæ of the male elongate, if bent backward extending to beyond mid-length of the abdomen; head dark grey; mesonotal præscutum light reddish brown without darker markings; wings greyish subhyaline, stigma lacking; abdomen dark brown, the hypopygium more yellowish.

*Male*.—Length 4 mm.; wing 4.2 mm.

Rostrum brown, the mouth-parts more yellowish, slightly elongated; palpi dark brown. Antennæ very long for a member of this genus, if bent backward extending to about opposite the fifth abdominal segment; scape obscure brownish yellow, flagellar segments dark brown, the segments clothed

with an elongate, dense, erect, white pubescence. Head dark grey.

Mesonotal præscutum light reddish brown without darker markings; remainder of the mesonotum brownish yellow. Pleura brown, the dorsal pleurites a little more reddish. Halteres pale, the knobs darker. Legs with the coxæ and trochanters pale brown; remainder of the legs light brown. Wings faintly greyish subhyaline; stigma lacking; veins dark brown. Venation:  $r$  on  $R_{2+3}$  about its own length beyond the fork of  $Rs$ ;  $Rs$  straight or even weakly convex, without macrotrichia;  $R_{2+3}$  rather weak just beyond  $r$ , but becoming stronger distally and here provided with about a score of macrotrichia; deflection of  $R_{4+5}$  long, straight, in alignment with the outer section of  $R_{4+5}$ ;  $r-m$  at right angles to  $R_{4+5}$ , in alignment with the subequal basal deflection of  $M_{1+2}$ ; petiole of cell  $M_3$  very short, about equal to or a little longer than  $r$  and about two-thirds the basal deflection of  $M_{1+2}$ ; basal deflection of  $Cu_1$  about in alignment with the fork of  $Rs$ .

Abdomen dark brown, the hypopygium more yellowish. Male hypopygium with the pleurites moderately slender; two slender pleural appendages, one tipped with a few long yellowish bristles.

*Hab.* West Africa.

*Holotype*, ♂, Lonji, about 50 miles north of Kribi, near the Nlong River, Cameroun, April 19, 1920 (*J. A. Reis*).

"Taken at a lamp in the evening."

*Gonomyia (Leiponeura) pulchripes*, sp. n.

General coloration dark brown; basal segments of antennæ, head, pronotum, and a narrow stripe on the thoracic pleura light yellow; halteres yellow, the base of the knobs brown; legs yellow, the femora with a broad dark brown subterminal ring; wings brownish grey, a subhyaline area before and beyond the stigma and at the wing-tip;  $Sc$  short,  $Sc_2$  at the tip of  $Sc_1$ ; male hypopygium with three pleural appendages.

*Male*.—Length about 3.2 mm.; wing 3.3 mm.

Rostrum and palpi dark brown. Antennæ with the enlarged scapal segments light sulphur-yellow, the basal flagellar segments pale yellow, soon passing into dark brown; flagellar segments provided with long, conspicuous verticils. Head light yellow, badly folded in the unique type, the centre of the vertex apparently marked with dark brown.

Pronotum light sulphur-yellow, this coloration continued

caudad as a narrow line along the margin of the mesonotum to the wing-root. Mesonotal præscutum and scutum dark brown; scutellum similar, broadly margined posteriorly with light yellow; postnotum dark brown. Pleura dark brown, sparsely pruinose, with a narrow whitish-yellow longitudinal stripe extending from the fore coxæ to above the base of the hind coxæ. Halteres light yellow, the base of the knobs brown. Legs with the bases of the coxæ dark brown, this including all of the fore coxæ, the basal half of the mid-coxæ, and about the basal quarter of the posterior coxæ; trochanters dull yellow; femora dull yellow with a broad, conspicuous, dark brown ring before the tips, this broadest on the hind legs, where it is considerably longer than the pale tips, the apices and a narrow annulus before this ring clearer yellow than the remainder of the femora; tibiæ and tarsi brownish yellow, the apical tarsal segments brownish. Wings with a strong brownish-grey tinge, cells *C*, *Sc*, and most of *Sc*<sub>1</sub> and *R*<sub>1</sub> nearly hyaline, in the latter cell appearing as conspicuous areas before and beyond the stigma; a brownish seam extending from the concolorous stigma along the cord to the fork of *M*; a dark cloud at the end of *R*<sub>2+3</sub>; wing-tip in cells *R*<sub>3</sub>, *R*<sub>5</sub>, and 2nd *M*<sub>2</sub> nearly hyaline, this colour including the costa at this point; veins dark brown. Venation: *Sc* short, ending opposite the origin of *Rs*, *Sc*<sub>2</sub> at the extreme tip of *Sc*<sub>1</sub>, and exactly opposite the origin of *Rs*; *Rs* moderately long, arcuated, slightly angulated at base; cell 1st *M*<sub>2</sub> closed, the proximal end slightly narrowed; basal deflection of *Cu*<sub>1</sub> immediately beyond the fork of *M*; costa fringed with conspicuous erect hairs.

Abdomen dark brown. Male hypopygium with the pleurites moderately stout, with three pleural appendages, the longest of these chitinized, slender, the apex obliquely truncated and slightly dilated, provided with a comb of short teeth; the second appendage is a little shorter, produced into a short pointed beak, at the base of the beak with a short powerful spine surrounded by numerous reddish bristles; the third appendage is the shortest, pale yellow, elongate-oval, at the tip produced into a powerful bristle, before the tip with several smaller setæ. The gonapophyses are dark-coloured, fleshy, produced laterad into a small acute point. What seems to be the ninth tergite is bifid and heavily armed with powerful spines and heavy black bristles, these shorter at the apices of the lobes.

*Hab.* West Africa.

*Holotype*, ♂, Efulan, Cameroun, May 7, 1920 (*J. A. Rees*).

## XIPHOLIMNOBIA, gen. nov.

Antennæ with 16 segments, those of the flagellum elongate-oval with moderately long verticils. Tibiæ without spurs; claws small, simple. Wings with numerous macrotrichiæ on the distal two-thirds of the veins, lacking on the veins proximad of the basal third of the sector, except a series of about 11 that occupy the distal two-thirds of vein *2nd A*; *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub>; tip of vein *R*<sub>1</sub> entirely atrophied; cell *M*<sub>1</sub> lacking; basal deflection of *Cu*<sub>1</sub> at about three-fourths the length of cell *1st M*<sub>2</sub>. Ovipositor with the valves exceedingly long and slender, nearly as long as the entire remainder of the abdomen.

Genotype.—*Xipholimnobia terebrina*, sp. n. (Western Ethiopian Region).

The new genus *Xipholimnobia* is based on a single small species, in which the valves of the ovipositor are of a length that is unequalled, proportionate to the size of the fly, in any other known crane-fly. This condition of the terebra probably indicates a highly specialized habit of oviposition, but this is at present unknown. The position of *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub> is an uncommon character in the tribe Eriopterini.

*Xipholimnobia terebrina*, sp. n.

General coloration brown; wings light brown, *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub>; tip of *R*<sub>1</sub> beyond *r* atrophied; basal deflection of *Cu*<sub>1</sub> at about three-fourths the length of cell *1st M*<sub>2</sub>; valves of the ovipositor very long and slender, nearly as long as the remainder of the abdomen taken together.

*Female*.—Length 3.6 mm.; wing 3.6 mm.; ovipositor alone 1.4 mm.

Rostrum and palpi dark brown. Antennæ long for this sex, if bent backward extending beyond the wing-root, dark brown, the first scapal segment paler; flagellum with the segments elongate-oval, the terminal segments elongate-cylindrical; flagellar segments provided with long conspicuous verticils that are much longer than the segments that bear them. Head brownish grey.

Pronotum dark brown. Mesonotal præscutum shiny testaceous brown. Pleura yellowish testaceous. Halteres pale brown, the knobs slightly darker. Legs with the coxæ and trochanters pale testaceous; remainder of the legs light brown. Wings with an almost uniform light brown suffusion; stigma lacking; veins pale brown; macrotrichiæ confined to the veins beyond the level of the origin of *R*s excepting a

series on vein 2nd *A*. Venation: *Sc*<sub>2</sub> at the tip of *Sc*<sub>1</sub>, the latter ending at from three-fourths to four-fifths the length of the long sector; *Rs* long, gently arcuated, with about 16 macrotrichiæ; *R*<sub>2+3</sub> in alignment with *Rs*, longer than cell 1st *M*<sub>2</sub>; *R*<sub>2</sub> at origin bent at almost a right angle to *R*<sub>2+3</sub>, the basal deflection destitute of macrotrichiæ; *r* inserted at the bend of *R*<sub>2</sub>; inner ends of cells *R*<sub>3</sub>, *R*<sub>6</sub>, and 1st *M*<sub>2</sub> about in alignment; cell 1st *M*<sub>2</sub> narrowed at its proximal end; basal deflection of *Cu*<sub>1</sub> at about three-fourths the length of cell 1st *M*<sub>2</sub>.

Abdomen brown, sparsely hairy. Ovipositor yellowish horn-colour, the valves exceedingly long and slender, but little shorter than the entire remainder of the abdomen; tergal valves almost straight, the margins smooth or nearly so, the extreme tips a little upcurved; sternal valves long and straight, the tips pointed.

*Hab.* West Africa.

*Holotype*, ♀, Efulan, Cameroun, May 7, 1920 (*J. A. Reis*).

*Trentepohlia (Mongoma) niveipes*, sp. n.

General coloration brown; legs dark brown, the knees, at least in the posterior legs, only narrowly and indistinctly pale; tarsi and apical third of the tibiæ white; wings greyish brown, the tip narrowly darkened.

*Male*.—Length about 8.8 mm.; wing 6.5 mm.

*Female*.—Length about 9.5 mm.; wing 6.7 mm.

Rostrum and palpi light yellow, both the labial and maxillary palpi dark brown. Antennæ rather elongate, dark brown. Head dark brown, the vertex narrowed between the eyes.

Mesonotum brown, the pleura more yellowish brown. Halteres dark brown. Legs with the coxæ and trochanters testaceous yellow; femora dark brownish black, the tips narrowly and indistinctly paler; most of the legs were detached in the envelopes, but there is evidently a difference in the amount of pale coloration at the knees in the different legs, the posterior legs probably having the white most reduced and almost obliterated; tibiæ brownish black, the base very narrowly and indistinctly pale, not clear-cut as in the other members of the *fragillima* group; tibial apex abruptly and broadly white, this including the distal third or less; tarsi white, the terminal segments a little darkened. The armature of the femora and tibiæ that is found in the related species is here little in evidence; the legs are clothed with the usual abundant appressed hairs and at comparatively

long intervals on all the segments are shorter, erect, very delicate hairs. Wings with a distinct greyish-brown tinge, the wing-tip narrowly darkened; cells *C* and *Sc* darker than the ground-colour; stigma small, dark brown; cord narrowly seamed with brown; veins dark brown. Venation: as in *T. (M.) albilata*, but *Sc*<sub>1</sub> considerably shorter; basal deflection of *R*<sub>4+5</sub> usually shorter. About three long bristles on the posterior side of the wing-petiole.

Abdominal tergites dark brown, paler laterally; sternites obscure yellowish brown.

*Hab.* West Africa.

*Holotype*, ♂, Lonji, about 50 miles north of Kribi, near the Nlong River, Cameroun, April 16, 1920 (*J. A. Reiss*).

*Allotopotype*, ♀, April 19, 1920.

"In swamp, hovering about base of sapling."

*Trentepohlia niveipes* is closely related to *T. albilata*, Alex. (Cameroun), from which it differs in its smaller size and the coloration of the legs.

#### *Lecteria reisi*, sp. n.

Head brownish orange; mesonotum dull reddish orange; femora brownish yellow; tibiae yellowish brown, the tips very narrowly dark brown; metatarsi whitish; wings yellowish, with four small brown spots in the radial field; *Rs* short; abdomen yellowish orange, tergites two to seven with a narrow black basal ring.

*Male*.—Length 15–17.5 mm.; wing 13.5–15.4 mm.

Rostrum short, reddish brown; palpi dark brown. Antennæ with the basal scapal segments yellowish brown, the basal flagellar segments brownish yellow, soon passing into dark brown; flagellar verticils very long. Head dull brownish orange.

Mesonotum dull reddish orange, the postnotum more testaceous. Pleura yellowish testaceous. Halteres small, brown, the knobs dark brown. Legs with the coxæ and trochanters obscure yellow; femora brownish yellow, the extreme tips very narrowly dark brown, on the outer face only; tibiae yellowish brown, the tips narrowly dark brown; metatarsi whitish, the extreme base indistinctly infuscated, the tip narrowly dark brown; tarsal segments two and three brown, narrowly tipped with dark brown; remaining tarsal segments and the claws black; the hairy clothing of the legs moderately long, semi-erect; metatarsi at base with two powerful black spines, with sometimes a smaller additional one nearer the base. Wings with a yellowish tinge, clearer



in the subcostal cell; four comparatively small brown spots arranged as follows: At origin and fork of  $R_s$ ; at  $r$ ; at tip of  $R_2$ ; narrow pale brown seams along the cord, outer end of cell 1st  $M_2$ , and the fork of  $M_{1+2}$ ; wing-tip in cell  $R_2$  narrowly but distinctly darkened; veins dark brown. Venation:  $Sc_2$  removed to some distance from the tip of  $Sc_1$ , lying about opposite mid-length of  $R_{2+3}$ ;  $R_s$  short, angulated and slightly spurred at origin, about equal to or a little shorter than  $R_{2+3}$ ; cell 1st  $M_2$  varying in shape from subrectangular to irregularly hexagonal;  $m$  short, equal to or a little longer than  $r$ ; petiole of cell  $M_1$  about as long as this cell; basal deflection of  $Cu_1$  about equal to  $Cu_2$ , situated at about two-fifths the length of the lower face of cell 1st  $M_2$ .

Abdomen yellowish orange, tergites two to seven with a narrow basal black ring or triangular-shaped area that occupies about the basal quarter or fifth of the segment, smallest on segment seven; hypopygium brownish orange.

*Hab.* West Africa.

*Holotype*, ♂, Lonji, about 50 miles north of Kribi, near the Nlong River, Cameroun, April 16, 1920 (*J. A. Reis*).

*Paratopotypes*, 2 ♂'s, April 16-19, 1920.

"Taken in a thick swamp, hovering around the base of saplings."

*Lecteria reisi* is most nearly related to *L. metatarsalba*, Alex. (French Congo), from which it differs as follows: Head much brighter-coloured; femora uniformly brownish yellow without a conspicuous paler subterminal ring; tibiæ pale; metatarsi scarcely darkened at base; wing-pattern much more restricted, the four principal spots much smaller, and the seams along the cord much narrower and very faint; abdomen clear yellowish orange with only the bases of the intermediate tergites narrowly darkened.

It is with great pleasure that this handsome crane-fly is dedicated to my friend, the Reverend Jacob A. Reis, as an appreciation of his earnest and successful efforts in collecting these flies in the Cameroun.

*Eriocera helophila*, sp. n.

Antennæ short; scapal segments yellow, flagellum dark brown; head orange, brightest on the vertical tubercle; mesonotum shiny brownish yellow; legs black, the femoral bases yellow; wings broad, light greyish brown, cell  $Sc$  yellowish; brown seams at the origin of  $R_s$  and along the cord; cell  $M_1$  lacking.

*Male*.—Length 13·8 mm. ; wing 12·8 mm.

Rostrum and palpi very small, brown. Antennæ short, scape light yellow, flagellum dark brown, clothed with moderately long hairs. Head brownish orange, on the vertical tubercle becoming clearer orange; the tubercle only moderately prominent, the anterior end shallowly notched.

Mesonotum shiny brownish yellow, the lateral margin of the præscutum darker brown. Pleura yellowish brown. Halteres brown, the knobs dark brown. Legs with the coxæ and trochanters shiny yellowish brown; femora black, the bases conspicuously yellowish, this somewhat broadest on the posterior legs; tibiæ black, the extreme bases narrowly and very indistinctly obscure yellow; tarsi black. Wings broad, strongly saturated with light greyish brown; cell *Sc* and a broad line behind vein *Cu* light yellow; stigma sub-circular, greyish brown; conspicuous darker brown spots, arranged as follows: at arculus; at origin of *Rs*; at *Sc*<sub>2</sub>; at ends of veins *R*<sub>2</sub> and *R*<sub>3</sub>; along the cord and outer end of cell 1st *M*<sub>2</sub>; veins obscure yellow, darker in the infuscated areas; each vein is very narrowly seamed with yellow; macrotrichiæ confined to the distal ends of the subcostal and radial veins, except *R* which bears them for its entire length. Venation: *Sc*<sub>2</sub> a short distance from the tip of *Sc*<sub>1</sub>; *Rs* angulated and spurred at origin; *R*<sub>2+3</sub> a little longer than the basal deflection of *Cu*<sub>1</sub>; cell *M*<sub>1</sub> lacking; *Cu*<sub>2</sub> and the deflection of *Cu*<sub>1</sub> subequal, the latter about one-half its length beyond the fork of *M*.

Abdominal tergites brownish yellow, the sternites brighter. Hypopygium small.

*Hab.* West Africa.

*Holotype*, ♂, Efulan, Cameroun, May 6, 1920 (*J. A. Reis*).

“ Found on a swamp plant.”

XXXVII.—*Notes on various African and Asiatic Species of Lainus, Guérin, with an Account of their accessory ♂-characters [Coleoptera].* By G. C. CHAMPION, F.Z.S.

[Plate VIII.]

THIS paper is in continuation of one of the allied genus *Hapalochrus* published in the last volume of this Magazine, and it contains an account of all the species of *Lainus* represented in the British Museum, in the Hope collection